

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 06:29:24 1994
Date: Wed, 19 Oct 94 21:39:05 HST
From: jeffrey@math.hawaii.edu (Jeffrey Herman)
Message-Id: <9410200739.AA22016@kahuna.math.hawaii.edu>
Subject: 500 kc Part 7

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In order to preserve the history of 500 kc permission is
granted for wide distribution of this series as long as no
monetary gain is to be made. Please notify me in advance.

500kc Part 7: A Typical Evening

This part differs from the previous in that what follows will be an actual log of signals copied during a typical watch. During our training at Coast Guard Radioman School (Petaluma, CA) we were advised to attempt to log **everything** we heard. Well, that was an impossible task due to the volume of calls passing over the seas nightly! (Keep in mind that only short calls were permitted on 500 - as soon as contact was made one was to quickly move to a working frequency). What you'll see in the following log consists of only about 10-25% of the signals transmitted.

The log consisted of 3 columns: The actual signals copied, the frequency, and the time. A slash: / was used to indicate a break between two transmissions, **except** when it was actually sent over the air to indicate two frequencies - you'll see 454/440 meaning ``you send on 454 kc and I'll send on 440 kc'' (the -...-. is actually sent). Ships had a choice of using 425, 454, 468, or 480 kc as their working frequencies, while shore stations were only assigned one working freq, usually near one of the above, so in order to work duplex one of the above, which was closest to the shore's freq, would be used by a ship.

Everything you see will be actual transmissions except:

1. When preceeded by OPNOTE (= operator's note)
2. The BEGIN or END SILENT PERIOD entry.
3. The NO SIGS entry (meaning no signals heard in last 5 min.)

Notice the generous use of 'dit dit' (and us hams probably thought **we** invented it!). The 'dit dit' was actually one of the prosigns taught to us in CG school. [In the log it is indicated by 'EE'.]

RADIO LOG

U.S. COAST GUARD COMMSTA HONOLULU: NMO

RADIO DAY: xxxxx POSITION: MF CW (500KC / 600M)

OPNOTE: RM3 J.D. HERMAN ON WATCH, OPS NML	0800
OPNOTE: OBTAINED WWVH TIME TICK: CLOCK CORRECT	0801
VVV VVV TEST TEST DE NMO GE / GE / GE ...	500 0802
3WLM 3WLM 3WLM DE ZLW ZLW HW? / ZLW DE 3WLM QRU? /	
R 480/488 / OK UP / UP / EE / EE	500 0803
CQ CQ CQ DE VIA VIA VIA FOR TFC LIST QSW 446 AR	500 0804
KOK KOK KOK KOK KOK KOK KOK / DE / KOK KOK KOK	
KOK KOK / LID / KOK KOK KOK / DE / KOK DE FJNB	
GE UP / R UP / EE / EE	500 0806
JKPN JKPN DE JLRT JLRT / JLRT DE JKPN QTH? / NW AM	
1500 KM SAILING 153 DEG OUT OF TOKYO / JLRT DE	
NMO PSE QSY / SRI NMO / JKPN DE JLRT UP 512 / UP	500 0807
OPNOTE: STATIC CRASHES ARE EAR-SPLITTING TONIGHT	0810
CLA CLA CLA DE 7XMC 7XMC K / 7XMC DE CLA GE / GE	
OM DO U HV SOUTH PACIFIC WX BETWEEN 20 ES 30 S	
W OF 180? / NOT YET - WILL HV IN 30 MIN - LSN FER	
OUR CQ / OK TKS / SEEU / SU	500 0814
BEGIN SILENT PERIOD	500 0815
VVV <SOMEONE TUNING UP> / SP / SRI	500 0816
TTT TTT TTT CQ DE VIM VIM VIM CYCLONE WRNG NR 17	
QSW 428 UP / TTT TTT TTT CQ DE VIS VIS VIS CYCLONE	
WRNG NR 17 QSW 460 AR	500 0817-18
END SILENT PERIOD	500 0818
FUM FUM FUM DE KNLW KNLW OBS K / KNLW DE XSU FUM	
QRT TIL 0900 K / R HV OBS K / OK UP 480/488 K /	
R UP / EE / EE	500 0820
CQ CQ CQ DE ZDLK ZDLK BT ANI ONE HV 0700 HYDROPAC	
BCST? / ZDLK DE DJKV R UP 480 HW? / OK / EE / EE	500 0824
NMC NMC DE WRTY WRTY / WRTY DE NMC GE / GE I NEED	
NTM NR 12-384 K / R UP 425/428 K / R UP / EE / EE	500 0827
TTT TTT TTT DE KNLH KNLH KNLH BT HAZARD TO SHIPPING	
LOST CONTAINER OVERBOARD QSS 425 UP	500 0830
OPNOTE: SHIFTED TO 425 KC TO COPY KNLH'S MSG	0830
OPNOTE: KNLH LOST CONTAINER IN POSN 43.4N 135.8W - INFO	
PASSED TO RCC FOR DISTRICT 12 NTM	0831-33
KNLH DE NMO QSL WILL PASS UR MSG TO SAN FRAN K / NMO	
DE KNLH R TU OM NIL VA / DE NMO SU VA / EE / EE	500 0834
CQ CQ CQ DE CLA CLA CLA FOR SOUTH PAC WX ES NAV	
WRNGS QSW 470 AR	500 0835
JNA JNA JNA DE JNTS JNTS NW ARR TOYKO K / JNTS DE	
JNA QSL QRU K / QRU VA / EE / EE	500 0837
CQ CQ CQ DE KPH KPH KPH TFC LIST ES WX 512 AR	500 0840
BEGIN SILENT PERIOD	500 0845

END SILENT PERIOD	500	0848
XXX XXX DE 9FJT 9FJT 9FJT BT ENGINE ROOM FIRE		
NOW EXTINGUISHED NO POWER NEED ASSISTANCE 28.38S		
28.38S 165.55W 165.55W / 9FJT 9FJT DE VIB VIB QSL		
UP 425/430 K / VIB DE 9FJT R UP / EE / EE	500	0848-49
OPNOTE: SPVR NOTIFIED OF 9FJT'S XXX		0849
CQ CQ CQ DE NRV NRV NRV WX AND CG MARINE INFO BCST		
QSW 435 KC AR	500	0850
NMQ NMQ NMQ DE ONKJ ONKJ ONKJ K / ONKJ DE NMQ GM K /		
GM HV DH MEDICO CREWMAN WITH APPENDICITIS K / R		
UP 454/458 K / R UP / EE / EE	500	0853
NMO NMO DE KPDR OBS K / KPDR DE NMO UP 454/440 K / R		
UP / EE / EE	500	0854
KPDR DE NMO GE K / NMO DE KPDR GE OBS QRV? / R		
AA 99	440/454	0855
OPNOTE: RCVD OBS FROM KPDR	454	0856
KPDR DE NMO QSL QRU? K / NIL TU OM SU VA / SEEU VA /		
EE / EE	440/454	0856
CQ CQ CQ DE XJA X / CQ CQ CQ DE 5JA 5JA 5J / CQ CQ		
CQ DE KFS KFS KFS TFC L / CQ CQ CQ DE / <QRM 5>	500	0900
NO SIGS	500	0905

What you see above is a typical one hour period of evening signals transcribed with, again, at most 25% of the transmissions logged.

The 0900 entry was typical for the top of the hour - a dozen CQ's being sent at once!

Jeff NH6IL
jeffrey@math.hawaii.edu

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 19:09:50 1994
Date: Thu, 20 Oct 94 09:21:03 HST
From: jeffrey@math.hawaii.edu
Message-Id: <9410201921.AA10447@cruncher.math.hawaii.edu>
Subject: Re: 500kc Part 7

Kevin and the Gang,

Thanks for the nice correspondence from everyone.

Some unfamiliar prosigns:

GE = good evening. A GE (or GM) sent out to no one in particular on 500kc will result in a flood of responses of GE's from around the Pacific, for it no one wants to be impolite and not return

the greeting! We wouldn't log all the responses - too many. Remember that 500 is just like a bit transoceanic partyline in which the whole world listens to; just as much as a single 'dit' will invoke a riot of dits being thrown back at you, all in good nature. The international voice calling&distress freqs are cold and impersonal; 500 had personality and humor and friendliness on it.

GV = give

NIL = no, negative, nothing.

Jeff NH6IL

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:12:27 1994
Date: Thu, 20 Oct 94 17:56:27 -0400
From: ki5sl@ki5sl.ampr.org
Subject: <didn't bother with a subject>
Message-Id: <9410202156.AA02159@geechnu.ai.mit.edu>

Date: Thu, 20 Oct 94 21:48:30 UTC
Message-Id: <2587@ki5sl.ampr.org>
>From: ki5sl@ki5sl.ampr.org (Rick_Blank)
Reply-To: ki5sl@sat.ampr.org
To: boatanchors@gnu.ai.mit.edu
Subject: Re: Don't discount the Windom
Lines: 33
X-Organization: private site,Amateur Radio Station KI5SL
X-Mailer: PCElm 3.21

In message <941020143933_71333.144_DHQ98-8@CompuServe.COM>
71333.144@compuserve.com writes:

> With regard to the ladder-line discussion, a lot of emphasis seems to be
> placed on the "all-band" aspect of the resulting dipole. My suggestion is
> skip the ladder line and the dipole. Instead, hang a Windom off-center fed
> dipole. It covers all-bands reasonably well. It is adequately efficient.
> And the combination of horizontal and vertical elements makes it an
> excellent and quiet receiving antenna. Buy the Carolina Windom from
> Radio Works (I think) and feed it with coax. You won't regret it.

>

> This is on my mind because I am in the process of re-hanging mine. I sure
> have missed it and want to make sure it gets back up before winter. The
> other pre-winter project is getting the BC-325 out of the garage and
> into the sack (basement). Anybody want to come over and help push 900
> pounds of transmitter around?

>

>

Well, I do admit that my waterbed would probably make a pretty good ground plane, the thought of bringing a BC-325 into it would have me being loaded up by the YL and used off resonance! After that, I guess I'd have to have someone push me around.... You sure do have a lot more guts than me! Or maybe just lonely? I know you meant shack, but, it was still funny!

I don't envy you, moving my BC-610 is enough of a chore and it's only about half that weight and on rollers!

Yep, it's Radio Works that has the Carolina Windoms (available in several different flavors) and also has the "Remote Balun" that they promote as the solution to those pesky ladder line feeders. I have used and still do use Radio Works baluns and feel like they are good pieces of gear, unlike some of the baluns out there!

Rick Blank, KI5SL
ki5sl@sat.ampr.org
2223 Blanco Road
San Antonio, Texas 78212
end

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 15:31:45 1994
Message-Id: <9410201622.AA23581@wrdis01.robins.af.mil>
Date: Thu, 20 Oct 94 12:22:34 -0400
From: lakeith@wrdis01.robins.af.mil (Larry CONTRACTOR Keith Mr.)
Subject: BC-610M

If anyone is looking for a nice BC-610M, Jack Wagner down in Waycross has one for sale with the 9 tuning units to cover 2.0 to 18 Mc. His number is 912-283-2779. I haven't seen it. Jack told me about during the hamfest. I just found the note in my wallet..

73,

Larry, KQ4BY

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:02:24 1994
Message-Id: <MAILQUEUE-101.941020152303.416@vilas.uwex.edu>
From: "Terry O'Laughlin" <OLAUGHLIN@vilas.uwex.edu>
Date: 20 Oct 94 15:23:03 CDT
Subject: Re: Collins 651s1

> > One minor correction, though. My 1994 Tucker Electronics catalog
> > has a Collins 651s1 receiver listed. Price is \$ 1195. Sounds like
> > a bargain! However, the frequency range of the receiver is listed as

> > "...297,500 channels in the 250 KHz to 29.9999 MHz freq. range...".
> >
> VLF reception was an option, you replace RF module A6 (CPN 790-1048-008/-020)
> with module (CPN 790-1048-010/-021) and voila! coverage from 12kc to 29.9999mc
> When you used this option 12kc to 559.9999kc was up converted, making this a
> triple conversion set. The HF frontend was protected by 10 3/4 octave filters
> that were diode switched as you tuned along. Also the early models were semi-
> hollow-state, the display used the green VF tubes, later the display used LEDs.
> The design of this set must predate '78 as the early boards used pre 7400
> series logic (all flat packs), latter most of the boards were re-designed to
> use mostly 7400 series (really 5400 mil. spec.).

This description sounds suspiciously like the 51S1, especially the part numbers, flat packs and nixies in early models. In that case, the LF reception conversion also requires swapping a second board in the synthesizer section. My 51S1 receives down to approx 60 kHz as-is. The specs say 250 kHz at reduced sensitivity below 2 MHz. Nevertheless there is no sharp cutoff on the low end. The sensitivity just continues to drop.

73s Terry O' WB9GVB

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 14:50:35 1994
Date: Thu, 20 Oct 1994 12:46:43 -0500
From: CCS_MAH@admin.fandm.edu (Mark Hemlick Ph. D.)
Subject: RE: don't count out the Windom
Message-Id: <01HII067X4B6A9LHLP@ACAD.FANDM.EDU>

Don wrote:

>The other pre-winter project is getting the BC-325 out of the
>garage and into the sack (basement). Anybody want to come over and help push
>>900 pounds of transmitter around?

This has to be a typo. I don't think I want to push 900 lbs of _anything_ around in the _sack_!

Best wishes

Mark KA3LFG

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 11:29:48 1994
Date: 20 Oct 94 10:39:33 EDT
From: don merz <71333.144@compuserve.com>
Subject: Don't discount the Windom

Message-Id: <941020143933_71333.144_DHQ98-8@CompuServe.COM>

With regard to the ladder-line discussion, a lot of emphasis seems to be placed on the "all-band" aspect of the resulting dipole. My suggestion is skip the ladder line and the dipole. Instead, hang a Windom off-center fed dipole. It covers all-bands reasonably well. It is adequately efficient. And the combination of horizontal and vertical elements makes it an excellent and quiet receiving antenna. Buy the Carolina Windom from Radio Works (I think) and feed it with coax. You won't regret it.

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From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 19:49:53 1994
Date: Thu, 20 Oct 1994 15:30:28 -0400 (EDT)
From: "J. D. Delancy" <k1zat@bah.com>
Subject: Re: Don't discount the Windom
Message-Id: <Pine.3.05.9410201525.B14024-9100000@booz.bah.com>

On 20 Oct 1994, don merz wrote:

> other pre-winter project is getting the BC-325 out of the garage and into the sack
> (basement). Anybody want to come over and help push 900 pounds of transmitter
> around?

Sack? What city and state is the "sack" in ?

jd

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:33:47 1994
Message-Id: <MAILQUEUE-101.941020174107.288@vilas.uwex.edu>
From: "Terry O'Laughlin" <OLAUGHLIN@vilas.uwex.edu>
Date: 20 Oct 94 17:41:07 CDT
Subject: Equipment lists

It has been suggested that I should start a general military radio equipment list similar to the CEI/WJ/DEI/LTV/Nems-Clarke/Racal lists that I have up and running. I like the idea but the work would be formidable, an order of magnitude greater than all the lists I've already started.

If there is interest in such a list, I would volunteer to be the editor, if others will volunteer to do some typing. We could setup a format and pull out our old Fair catalogs, the Feb. '83 PopComm list, etc, and hit the keyboards. I would love to have a list that runs in alphanumeric order so I can instantly look up an AN/FRR-60B or an R-573 or whatever. I started the other lists to help me decipher the numerology for those brands. A military list would be similarly useful. Anybody interested?

73s Terry O' WB9GVB

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 02:57:25 1994
Date: Thu, 20 Oct 94 04:13:21 UTC
Message-Id: <2569@ki5sl.ampr.org>
From: ki5sl@ki5sl.ampr.org (Rick_Blank)
Subject: Hallicrafters SR series Pt.1

Well, it was asked for, so, here goes:

A little of the SR series history (with special thanks to Max de Hensler and his book: " The Hallicrafters Story, 1933-1975)..

In studying the book, it appears that the first Hallicrafters piece to use the styling of the SR-150, SR-160, SR-400, SR-500 (the Tornado was actually the second SR-500, the first was the HT-30 transmitter, the SX-100 receiver, and the HT-31 Linear amplifier mounted in a commercial broadcast styled console), and the SR-2000 was the SX-117 receiver. This was a good receiver with 3 seperate bandwidths, AM, CW, SSB modes, triple conversion, had four auxiliary positions for general coverage type bands, a provision for operation on frequencies between 85 kcs and 3.0 mcs with an auxiliary LF/MF tuner model HA-10, had 14 tubes, had most of the features of it's big brother, the SX-115, and cost in 1963, \$379.95. The R-47 speaker was recommended for voice and CW use, the R-48A was recommended for other uses. This unit's introduction in October of 1962 was the launch of the new silver, black and grey front panel treatment.

The SR-150 5-band transceiver was introduced in November of 1962. The matching AC power supply was the P-150-AC and the mobile supply was the P-150-DC. I think this was one of the very first radios to use RIT (if you've used xcvs without RIT in them you know how great a feature this could be, especially when all the other guys were running seperate xmitrs and rcvrs). The SR-150 is rated at 150 w input SSB and 125 CW. This unit listed at \$650 and the power supply was \$99.50

In November 1963, the matching transmitter to the SX-117 was introduced.

The HT-44 had Hallicrafters stabilized phasing system for sideband generation and had a pair of 6DQ5's for finals. It was rated at 200 watts input for AM, CW, or SSB operation, on 80 thru 10 meters. This unit also used the P-150-AC power supply-speaker. The HT-44 cost \$395 and the CA-44 interconnecting cable for transceive operation with the SX-117 cost \$4.95. So, cost for the SX-117 and HT-44 combination with power supply was \$879.40, in 1963 dollars!

In December 1963, the SR-160 was introduced. It was a compact tri-band, single conversion 150 watt PEP input rig. It had 17 tubes and used the PS-150 supplies, weighed 13.25 lbs and cost \$349.50. It did not have a notch filter or CW filter.

In April of 1964, the SX-122 receiver was introduced. It was a general coverage AM/CW/SSB, dual conversion on all bands, bandspread, 11 tube receiver. The unit cost \$295. The SX-122-A was introduced in 1967 and was almost the same rig with a few minor component changes and it listed for \$395 without a speaker. Accessory calibrators were the HA-7 for the 122 and the HA-19 for the 122A.

In May of 1964, the HT-45 "Loudenboomer" amp was introduced. This was a Hallicrafters styled Radio Industries amplifier. The Loudenboomer was marketed by RI and Hallicrafters took them over and they became a subsidiary of Hallicrafters. This rig used a single 3-400 tube and could deliver full legal power when used with a 2700 to 3000 volt at 380 ma. power supply. Hallicrafters recommended the P-45 power supply for this amp. The amp cost \$299.50, the P-45 weighed 58 lbs. and cost \$199.95.

In January of 1965, the SR-42 and the SR-46 2meter and 6 meter transceivers were introduced. They had dual conversion receivers and crystal controlled transmitters of 5 watts output. They weighed 17 lbs and cost \$189.95

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 06:11:26 1994
Date: Thu, 20 Oct 94 04:13:21 UTC
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From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 06:11:27 1994
Date: Thu, 20 Oct 94 04:33:50 UTC
Message-Id: <2574@ki5sl.ampr.org>
From: ki5sl@ki5sl.ampr.org (Rick_Blank)
Subject: Hallicrafters SR series pt.2

In June 1965, the SR-500 "Tornado" was introduced. It covered 80, 40, & 20 meters. This unit used two 8236 tubes in the PA (try finding any!) and had an input rating of 500 watts PEP SSB and 300 watts CW. It was also a single conversion rig like the SR-160 and also had no notch or CW filter, either. The unit used the P-500-AC or DC power supplies. The radio cost \$395, the AC supply was \$109.95 and the DC supply was \$149.95.

December of 1965 saw the introduction of the Hallicrafters "Hurricane". The SR-2000 was a high performance, compact, table top rig with a 2000 watt input rating. The final tubes were 8122's. The rig had RIT, an Amplified Automatic Level Control (AALC) that worked during transmit, and was capable of 1000 watts PEP out and 500 watts on CW. It had a built-in, adjustable IF noise blanker. The radio cost \$995 in 1965 and the matching P-2000 power supply with meters for plate current and plate voltage cost \$395.

The Model HA-20 was a self contained VFO for use with the SR-2000 and the SR-400 series of transceivers. With this unit, the operator could use frequencies separated by as much as the 500 khz band segments would allow. It had an SWR meter, and was capable of "dual receive" (hearing both the transmitter and receiver frequencies if working splits) and cost \$199.95.

In 1966, Hallicrafters was purchased by the Northrop Corporation. It is said that this is what brought about the rapid decline of the Hallicrafters position in amateur radio equipment production.

The next "SR" series of rig to be produced was the SR-400

"Cyclone". This unit was introduced in May of 1967.

This rig was an improvement over the earlier SR-2000 in several ways while remaining a lot of identical features and circuits. The power supply and final amplifier were different, but, the rest of the transmitter was the same. The receiver was improved by the addition of a narrow CW reception selection and by the inclusion of a notch filter. The rig was rated at 400 watts PEP input for SSB and 360 watts for CW. The matching power supply-speaker was the PS-500-AC. The radio weighed 18 lbs and cost \$799.95, the power supply cost \$119.

In April of 1971, the SR-400-A, "Cyclone III" was introduced. It is supposed to be almost identical but to offer an optional cooling fan, the HA-60, for improved reliability. The SR-400-A cost \$895 and the fan was \$39.95.

The SR-400A was the last of the SR series produced and ended production in 1972, the SR-2000 was made until 1971, the "Tornado" was made in 1965 and 1966, the SR-150 was made from 1962 til 1965, the SR-160 in 1963 and 1964. Looking at the charts, the SR that was produced the most years without a change was the SR-2000 with production for seven years and next would be the two SR-400 variations for a total of 5 years. This information is according to the advertising information given in de Hensler's book. The SX-122A was last advertised in 1970.

For a few personal observations: I have an SR-150 and an SR-400A. Both are pretty good rigs, but are like all old rigs, sometimes tempermental and sometimes needing a little TLC. I have had an SR-500 "Tornado" and sold it after not being able to find any tubes for the PA in a one year long search. The unit would hit 300 watts peak output on 75 meters and about 225 on 40 and 20. A buddy of mine wanted it and he eventually sold it, too. I feel like the SR-150 is a much better rig than the SR-160 or the Tornado. It's receiver is dual conversion, a bit more selective, and just a bit nicer rig to use. The SR-400A is a jewel to use, it's noise blanker absolutely blows away the ones in either my Yaesu FT-990 or my Icom R-71A. It will even knock back line noise and make conversations possible when I cant hear them on the new stuff! It takes a steady hand to adjust, but, is a real winner in my book. The CW filter is OK and the notch filter works, all in all, my favorite SSB Boatanchor to use.

I hope this helps with some who are asking questions about this series and style of Hallicrafters rigs and hope you have fun with them. I am still looking for a nice SX-117 - HT-44 combination, and hope to see a set of them one of these days...

Rick Blank, KI5SL
ki5sl@sat.ampr.org
2223 Blanco Road
San Antonio, Texas 78212
end

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 08:42:07 1994
Message-Id: <n1429496592.85379@cpqm.saic.com>
Date: 20 Oct 1994 07:06:09 U
From: "Bob Scott" <Bob_Scott@cpqm.saic.com>
Subject: Ladder Line Continued

Thanks to all that replied. It pretty much confirmed what I thought I understood. I liked the idea of using coax to a balun to ladder line, but that leads me to another question.

The goal here is to have a multiband antenna or the most flexible antenna possible with my limited yard space. Since the feedline is part of the antenna, will not the impedance presented to the balun change (on the ladder line side) with frequency/band? And is the mismatch reflected back down to the transmitter or tuner?

I think that I will get a balun and just play with it and see what happens. Sometimes I miss the days when I was ignorant and just threw something into the air and did not worry about it. My most remembered contact was when I was 15 and worked I Hawaii as a novice from Erie, PA on a dipole that at its peak was only 10 feet off the ground. Highly inefficient, but effective. 73 Bob AC4QO
on 40 meters in the morning.

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 12:39:39 1994
Date: Thu, 20 Oct 94 10:57:42 CDT
Message-Id: <9410201557.AA29699@unlinfo2.unl.edu>
From: djw@unlinfo.unl.edu (Daniel Wright)
Subject: Re: Ladder Line Continued

Bob sez:

>I liked the idea of using coax to a balun to ladder line, but that leads me to another question.....

And

>I think that I will get a balun and just play with it and see
>what happens.

Ok..can someone share with the assembled group what homebrew designs and/or commercial baluns are available and any experiences therewith?? I'm speaking about the balun that would be placed outside the shack with a coax feed from the rig and a "balanced line" feed to the antenna.

..Dan WA0JRD

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 19:18:40 1994

From: rdkeys@csemail (R. D. Keys)

Message-Id: <9410201703.AA102928@csemail.cropsci.ncsu.edu>

Subject: Re: Ladder Line Continued

Date: Thu, 20 Oct 94 13:03:46 EDT

>

> Bob sez:

> >I liked the idea of using coax to a balun to ladder line, but that leads me
> to another question.....

> And

> >I think that I will get a balun and just play with it and see

> >what happens.

>

> Ok..can someone share with the assembled group what homebrew designs and/or
> commercial baluns are available and any experiences therewith?? I'm speaking
> about the balun that would be placed outside the shack with a coax feed from
> the rig and a "balanced line" feed to the antenna.

>

> ..Dan WA0JRD

>

>

Think about what the balun in such a situation really is....

It is a simple pair of coupling coils that transform a coax impedance to a ladderline impedance. There are a zillion ways to accomplish that impedance/balance transformation. A balun ``brick'' is a simpleton's approach that is good, within certain limits --- like it can saturate or it does not suppress harmonics or reduce out-of-band interferences. But, it is a viable approach in many situations.

There are some available, but you may have to get a kit and wind yer own. A 9:1 or a 12:1 balun is needed to go from coax to ladder line. A local YL ham around here ordered a kit a few months back and built one, with good results. I don't have particular addresses available, but Amidon should be able to provide the right cores, if you tell them what you are trying to do. Winding is no problem, unless you are trying to use no. 10 or larger wire on too small a core..... (:+}}.....

If you choose your line lengths correctly, you don't really need a balun, but can feed directly. Alternatively, if you feed a stub, you can do a pretty good job, likewise. Direct feed usually requires a discrete feedline length for both the coax and the ladder line and it will be frequency fixed for a fundamental and odd harmonics. Stub feed is easy, just like the popular cast brass copper pole ``J-poles'' so many of the newbies are want to put up (for good reason --- it is an ancient design dating from the 30's THAT WORKS!!!!). The mismatch or misphasing because of balanced to unbalanced conversion is trivial and not a great problem. Before the purist theorists flame the hell out of me, I state this from a practical application point of view, and based upon a lot of my own first-hand experiences over the years.

I have a bobtail curtain that I feed with ladderline directly to a length of 93 ohm coax that comes to a 50 ohm length. On 20 it is gangbusters, but it is only a one-band affair. The feed is no problem, and matches well with little feedback on the outside of the braid.

For my use, I would prefer coax feed to a remote tuner (a hassle but better for harmonic suppression). I never trust baluns to work as expected. A tuner always has worked a little or a lot better in my hands over the years than a balun. There is always a case to be made for tuned coupling systems rather than untuned coupling systems. That has held up well since the spark days.....

I guess that philosophy qualifies me as an ol' fart....., oh, well.....!

GL OM
73 DE NA4G
Bob
rdkeys@csemail.cropsci.ncsu.edu

```
*****
* 73 TU SU VA DE NA4G          ``Boat Anchor Bob'', an ol' CW fart. *
*****
* Morse has been in the family for over 100 years.                      *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914.  *
*****
* May you have fair winds and following seas on your watch at the key. *
*****
```

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:28:49 1994
Date: Thu, 20 Oct 1994 17:58:56 -0500
From: CCS_MAH@ADMIN.FANDM.EDU (Mark Hemlick Ph. D.)
Subject: Re: Ladder line continued
Message-Id: <01HIIB2BYP5UA9LOMR@ACAD.FANDM.EDU>

Hi Bob,

You wrote:

>Does it not also radiate as it is part of the antenna?
>One of my problems is that my house access point is about
>20 feet or so from my equipment. The feedline has to run
>past a washer, dryer, and hot water heater (all electric).
>Bob

Tom replied:

>Hello Bob.
>
> Re. ladder line radiation:
>
> Yes, it WILL most certainly radiate, and quite effectively too, unless it's
>terminated at it's characteristic impedance (i.e., used "flat", which means
>no standing waves on the line. This effectively eliminates MOST multiband ant-
>ennas).

I'd like to add a few more points about LL radiation. Although LL will radiate, the amount of radiation depends on how it is installed and will be very small if it is installed correctly. As previously noted, LL is "correctly" installed when the antenna currents are balanced on each conductor. Balance is achieved when both legs of the dipole antenna are equal in length and both legs of the antenna and both conductors of the feedline are not differentially coupled to external "lossy" objects, either through inductive or capacitive coupling. Lossy objects include the ground, powerlines, buildings, trees, rain gutters, appliances, etc. Assuming the ideal situation of perfect balance, the LL will radiate a small amount at HF frequencies:

$$P=160(\pi * D/L)^2 I^2$$

Where

P=power in watts

$\pi=3.14159...$

D=distance between conductors in meters

L=wavelength in meters

I=line current in amps

So, for example take a 600 ohm feedline, with 6 in. (.15 m) spacing at 14 mhz with a current of 1 amp (i.e. power 600 W) (from Moxon, page 55):

$$0.09 \text{ W}=160(\pi/134)^2$$

Nine milliwatts of feedline radiation. Moxon states that "This is the same power as would be radiated from the same current in a short dipole of length equal to the line spacing" (i.e. a 6 in. dipole). Now, my understanding is that, if the system is well balanced, increasing SWR will not significantly increase feedline radiation. With higher SWR, the reflected currents on the two conductors will cancel each other, just as the incident currents do, thus almost eliminating feedline radiation.

The problem with parallel conductor line is maintaining balance, and it is difficult to achieve "perfection" here. However, there are several things you can do to construct a well balanced system. First, coupling between the feedline and lossy objects will be greatly reduced if you position the line at least 2-3 "conductor distances" away from the object. For example, 450 ohm window line is 1 in. wide. Mount it on standoff insulators at least 3 inches away from your wall, mast, etc. Second, run the line perpendicular to any long conductors, e.g. metal rain gutters. Finally, I don't see why you can't run the LL through your basement if you abide by these guidelines. You could use a good set of feed through insulators to get through the sill plate. Then, suspend the LL about a foot below the joists using monofilament fishing line. Avoid any sharp bends in the feedline. Also, be sure to use a feedline length that is not resonant with the operating frequency and run it at least 1/4 to 1/2 a wavelength away from the antenna feedpoint at a 90 degree angle.

Best wishes.

73 Mark KA3LFG

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 08:54:28 1994
Message-Id: <9410201211.AA20431@wrdis01.robins.af.mil>
Date: Thu, 20 Oct 94 08:11:06 -0400
From: lakeith@wrdis01.robins.af.mil (Larry CONTRACTOR Keith Mr.)
Subject: Ladder Line Lament

FWIW, I use ladder line to feed a 135' dipole and have been very happy with it. The line comes into the shack via a 3" diameter PVC pipe through the roof with a couple of elbows on the top to keep the rain out. The "sharp" turns required to get it through the elbow don't seem to bother the signals.

But, I have always wanted to try twinlead constructed from two pieces of coax. Use the center conductors as the twin leads and ground the shields together. Intuitively, it seems like the perfect combination of transmission line but I have never tried it.. Has anyone?

73,

Larry, KQ4BY

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 18:16:44 1994
Date: Thu, 20 Oct 94 17:21:28 EDT
From: klaudon@PICA.ARMY.MIL
Message-Id: <9410202121.AA16964@batdd6.pica.army.mil>
Subject: Ladder Line noise pickup?

TOM.A.ADAMS@mail.admin.wisc.edu wrote:

>
>Ladder line pros and cons:
>
>CON
>
> Open wire lines are more susceptible to noise pickup than coax, because of
>the total lack of shielding. NOTE! This does NOT apply to Twinax cable, some-
>times used as receiving feedline.

I don't quite understand why this would be so. Isn't the operation of a parallel conductor transmission line based upon the fact that the field generated by one conductor will be exactly opposite in sense to that generated by the other, and thereby the two fields will cancel exactly?

This is assumes that the line is exactly balanced; i.e., the current and voltage in one wire is exactly 180 degrees out of phase with that in the other. And of course, this is the mechanism whereby the line is self-shielding during TRANSMITTING.

I would think that the receiving case is analgous, except it is reversed. Any signal impinging upon a section (a point, actually) of parallel conductor line, should induce the exact same voltage and current in both wires. It will be a common-mode signal. This common-mode signal should exactly cancel itself in the load.

The line should be self-sheilding, whether transmitting or receiving. Right???

(By now, some of you guys are probably remembering those drawings of a couple of construction workers, who are muttering to themselves as the two, pixie-suited, Peter-Pan style, theory-espousing "engineers" sashay across the work site. "Youse guys watch yer mouths! Here comes two a' dem enguneer fellas!")

Is the cause of real feedline radiation, or feedline noise (signal) pickup, that this theoretical situation of exact balance is quite far from reality? I can see that radiation of even a few percent of the

transmitted signal from the feedline, can wreak TVI/RFI havoc, while not causing any noticeable drop in received signal strength at the distant station. And likewise on receive, even if the slightly unbalanced feedline is an efficient antenna compared to the real antenna, it will still be nice and close to all of the sources of EMI, AC line noise, dimmer hash, etc. and will generally be vertically polarized to boot! It will probably be noisy as heck (like mine is!!)

In either case, it would seem to be intuitive as well, that coaxial cable ought not to suffer these disadvantages. It would seem that the shield acts as a Faraday shield. The RF that is inside, stays inside, and that RF that is outside, stays out.

Can anyone comment on the above analysis? I would like to understand why twinlead would pick up noise!

I have never seen or used Heliac cable, but I assume that it is a parallel conductor line, run inside a nice shielded conduit of braid or armor.

I seem to have the same problem as the fella (Bob?) who asked the original question! I have my shack in the laundry room, next to the washer/dryer! Luckily, the dryer and water heater are gas. However, I do have a tremendously noisy location. My present run of 450 ohm ladder (plastic window) line is NOT run very sensibly. It exits the shack thru the top of the door frame, right across the aluminum storm door and frame. It runs along an outside wall, crosses the galvanized downspout, then runs up to the roof, again crosses the metal gutter, and up to the center fed wire, some of which lays on the roof (incl. the feed point!). Ugh, I know, it needs work!

I have heard that giving the ladderline a few twists along its length is useful. I'm not sure that I exactly understand why. Kind of like a twisted pair. I can imagine that if the line is run through an environment that will disturb the fields from both wires in an UNEQUAL manner (like, say, crossing a metal downspout at some angle other than 90 degrees), then perhaps twisting the line in that area will help to "equalize" the effect of the bad environment on both wires, instead of allowing it to affect one wire of the pair more than the other. Again, I would appreciate it if someone would inveigh forth on this subject!

I have never seen or used Heliac cable, but I assume that it is a parallel conductor line, run inside a nice shielded conduit of braid or armor. It would seem like this is the answer to a lot of peoples' problems! What is the catch? This cable is undoubtedly expensive. It requires those strange-looking twinax connectors. What are some common types, and characteristic impedance, loss, and power capacity? Where is the shield grounded - at the output of the BALANCED tuner, which feeds the two inside

wires?

>test if it goes directly into the shack. To avoid all of these problems, I use
>coax until I get outside, and then use impedance matching devices to transition
>to ladder line.

I have a Heath Balun. But does this become a lossy device? It is an air core device. I am not so thrilled about mounting it outside, where a few years of exposure to the elements may corrode the device, surely with some bad effects on RF performance. Besides, it is a vintage BA accessory! It would be nice to keep it in decent condition. Another problem is the mismatch to the coax section - should the balun be set up for 1:1, or 4:1? Perhaps, with the 20:1 mismatch already on the line, it may not make much difference!

73 de Kalman WD6CZI
klaudon@pica.army.mil

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:15:28 1994
Message-Id: <MAILQUEUE-101.941020171842.352@vilas.uwex.edu>
From: "Terry O'Laughlin" <OLAUGHLIN@vilas.uwex.edu>
Date: 20 Oct 94 17:18:42 CDT
Subject: Microwave gear for sale

My friend Kevin in Seattle, WA has the following for sale:

Electronics suite from AN/TRC-97A, 4.4-5.0 GHz, 1 kw, tropo, obstacle diffraction and meteor scatter communication.

Three Motorola MR-600 microwave receiver/transmitters. Two sets around 1.8 GHz, one around 6 GHz.

Prices are negotiable (probably cheap, he's an audio guy)

If you're interested, call him at (206) 768-0399

From owner-boatanchors@gnu.ai.mit.edu Fri Oct 21 00:25:39 1994
Message-Id: <MAILQUEUE-101.941020172715.512@vilas.uwex.edu>
From: "Terry O'Laughlin" <OLAUGHLIN@vilas.uwex.edu>
Date: 20 Oct 94 17:27:15 CDT
Subject: Mobile Radio Hut For Sale

Military surplus radio shelter to fit back of full-sized American pickup truck. Similar to S-318 shelter advertised in Fall 1993 Fair Radio catalog supplement. Stripped of AN/TRC-97A microwave gear. Aluminum construction, painted green camouflage. Located near Seattle. \$450, negotiable.

contact Kevin (206) 768-0399

From owner-boatanchors@gnu.ai.mit.edu Thu Oct 20 18:29:46 1994
Date: Thu, 20 Oct 94 14:12:59 EST
From: "Roy Morgan" <morgan@speckle.ncsl.nist.gov>
Message-Id: <63260.morgan@speckle.ncsl.nist.gov>
Subject: WANTED: xtals for R-390A: 200kc, 17 mc.

Anchorites,

My crystal set for the R-390A is nearly complete, I now only need the ones in the littlest oven (I have an oven.)

WANTED: xtals for R-390A: 200kc, 17 mc. HC-6/U case.

(Original mil-spec units not required.)

-- Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899
(National Institute of Standards and Technology, formerly NBS)
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov
